

TABLE A-3

Results for simultaneous equations model with 1998 lags—rural commuting zones

(Estimated regression coefficients on patents and population subset)

Variable	Population subset										
	Inventive class (IC)			Science, engineering, and technical (SET) employment			Creative class (CC)			At least 4-year college degree (BA)	
	Coefficient estimate		p-value	Coefficient estimate		p-value	Coefficient estimate		p-value	Coefficient estimate	p-value
Patents dependent variable											
IC	0.053	***	5.22E-05	-	-	-	-	-	-	-	-
SET	-	-	-	0.102	***	2.66E-04	-	-	-	-	-
CC	-	-	-	-	-	-	0.022	***	0.003	-	-
BA	-	-	-	-	-	-	-	-	-	0.017	***
1975–80 patent stock (PatStock)	0.077	**	0.037	0.021		0.670	0.047		0.345	0.015	
Population density (PopDens)	0.028		0.877	-0.024		0.905	-0.079		0.815	-0.080	
Wage-rental ratio (WageRentR)	2.231		0.380	2.729		0.338	3.025		0.384	2.260	
Natural amenity rank (NatAmen)	2.041		0.459	1.287		0.673	-3.280		0.414	-6.944	
University research expenditures (UniResExp)	0.619	**	0.042	0.113		0.829	0.294		0.589	0.025	
Location quotient for patent-intensive industries (LQPatInd)	-4.380		0.376	-0.026		0.996	4.006		0.380	11.275	**
Root mean square error (RMSE)	35.140			39.431			50.411			57.763	
Chi-squared	665.812			673.690			495.559			502.329	
p-value	<0.0001			<0.0001			<0.0001			<0.0001	
Mean variance inflation factor (VIF)	3.391			3.402			3.362			3.383	
Population subset equation											
Patents	12.621	***	<1.00E-08	9.068	***	<1.00E-08	38.334	***	<1.00E-08	57.478	***
Unemployment rate (UR)	-9.702		0.316	-1.970		0.626	-19.472		0.531	-5.228	
WageRentR	-74.166		0.125	-32.340		0.282	-202.734		0.273	-164.034	
NatAmen	-35.807		0.488	-11.760		0.715	161.523		0.414	417.482	
Crime	-2.556		0.367	-0.191		0.915	-2.052		0.844	0.313	
Proximity to urban center (ProxUrbCen)	-0.355		0.170	-0.040		0.710	-0.458		0.592	-0.172	
LQPatInd	173.306	***	0.003	12.274		0.740	-43.419		0.849	-610.417	*
RMSE	604.616			379.259			2,327.936			3,436.582	
Chi-squared	839.564			810.320			662.437			626.077	
p-value	<0.0001			<0.0001			<0.0001			<0.0001	
Mean VIF	3.164			3.164			3.164			3.164	

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.**Note(s):**

PopDens, WageRentR, UniResExp, UR, Crime, and ProxUrbCen are lagged to 1998. Structural equation estimates are based on 329 observations. Controls for Census region and Rural-Urban Continuum Code are included in each regression.

Source(s):

Authors' estimation using U.S. Patent and Trademark Office; Census Bureau, Special Tabulation (2000), 2000 Census of Population and Housing, Summary File 1 and Summary File 4, and Shapefile; Integrated Postsecondary Data System, 2000; Department of Agriculture, Economic Research Service, 1999, 2000; Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 1998.